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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/880,068	06/14/2001	Markus Speidel	P21086	6444

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GREENBLUM & BERNSTEIN, P.L.C.  
1950 ROLAND CLARKE PLACE  
RESTON, VA 20191

EXAMINER

WILKINS III, HARRY D

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 03/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/880,068

Applicant(s)

SPEIDEL ET AL.

Examiner

Harry D Wilkins, III

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 8-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

### DETAILED ACTION

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 8-20, 23, 27, 28, 30, 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kudo et al (JP 57-210941).

Kudo et al teach (see abstract) an alloy that contains 0.1-0.25 wt% C, less than 0.25 wt% N, 15-35 wt% Cr, 7.5-12 wt% Mo+W/2, less than 0.5 wt% Al, less than 1 wt% Si, less than 0.03 wt% P, less than 0.005 wt% S, with 30-60 wt% Ni and the balance Fe and impurities. The contents of C and Mo+W/2 (group 6 elements) are within the presently claimed ranges. The contents of N, Al, Si and Ni overlap the presently claimed ranges. See MPEP 2131.03. The ranges of Cr, P and S are broader than the presently claimed ranges. However, changes in temperature, concentrations, or other process conditions of an old process do not impart patentability unless the recited ranges are critical, i.e., they produce a new and unexpected result. In re Aller et al (CCPA 1955) 220 F2d 454, 105 USPQ 233. Only result-effective variables can be optimized. In re Antonie 559 F2d 618, 195 USPQ 6 (CCPA 1977). See MPEP 2144.05 II. In the present case, it would have been within the expected skill of a routineer in the

art to have optimized the contents of Cr, P and S within the broad range taught by Kudo et al in order to maximize the mechanical and chemical properties of the alloy (such as corrosion resistance).

Regarding claim 9, the range of C taught by Kudo et al overlaps the range of C in this claim. See MPEP 2131.03.

Regarding claims 10-12, though Kudo et al are silent about N/C, Kudo et al teach in the examples (see first table on page 6) that N/C ranges from 0.004667 (example 19) to 2.55 (example 1). Thus, Kudo et al teaches an overlapping range of N/C.

Regarding claims 13-14 and 34, Kudo et al teach (see abstract) that Mo+ W/2 is kept at 7.5-12 wt%, which overlaps the presently claimed range.

Regarding claim 15, it would have been within the expected skill of a routineer in the art to have optimized the content of Cr within the broad range taught by Kudo et al in order to maximize the mechanical and chemical properties of the alloy (such as corrosion resistance).

Regarding claim 16, Kudo et al teach (see abstract) an overlapping range of Si of less than 1.0 wt%.

Regarding claims 17 and 18, Kudo et al teach (see abstract) that the alloy may contain up to 0.20 wt% Y (group 3 element). It would have been within the expected skill of a routineer in the art to have optimized the content of Y in the alloy of Kudo et al in order to maximize the mechanical and chemical properties of the alloy (such as oxidation resistance).

Regarding claim 19, Kudo et al teach (see abstract) that the alloy contains less than 2.0 wt% Mn. It would have been within the expected skill of a routineer in the art to have optimized the content of Mn in the alloy of Kudo et al in order to maximize the mechanical and chemical properties of the alloy.

Regarding claim 20, Kudo et al teach (see abstract) that the balance of the alloy is Fe. When the composition was selected with a majority of Ni, it would have been expected to contain less than 14.8 wt% Fe.

Regarding claims 23, 27, 28 and 30, see above for the combinations of claims 17, 19 and 20.

Regarding claim 33, as above, Kudo et al teach the claimed composition. Though Kudo et al is silent on B being present, the present claim does not require B to be present and the claimed range includes an addition of zero.

4. Claims 21, 22, 24-26, 29, 31, 32 and 35-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kudo et al (JP 57-210941) as applied to claims 8-20, 23, 27, 28, 30, 33 and 34 above, and further in view of Smith et al (US 6,287,398).

The teachings of Kudo et al are described above in paragraph no. 3. However, Kudo et al is silent on the content of B in the alloy.

Smith et al teach (see abstract) a similar Ni-Cr alloy that contains 0-0.1 wt% B. Smith et al teach (see col 4, lines 23-24) that B is added at up to 0.01 wt% as a deoxidizer, but at 0.01-0.1 wt% for improving hot workability.

Therefore, it would have been obvious to one of ordinary skill in the art to have added B at up to 0.01 wt% as taught by Smith et al to the alloy of Kudo et al for the known purpose of deoxidation.

Regarding claims 22, 24-26, 29, 31, 32 and 35-38, Kudo et al teach (see abstract) that the alloy may contain up to 0.20 wt% Y (group 3 element). It would have been within the expected skill of a routineer in the art to have optimized the content of Y in the alloy of Kudo et al in order to maximize the mechanical and chemical properties of the alloy (such as oxidation resistance). Kudo et al teach (see abstract) that the alloy contains less than 2.0 wt% Mn. It would have been within the expected skill of a routineer in the art to have optimized the content of Mn in the alloy of Kudo et al in order to maximize the mechanical and chemical properties of the alloy. Kudo et al teach (see abstract) that the balance of the alloy is Fe. When the composition was selected with a majority of Ni, it would have been expected to contain less than 14.8 wt% Fe.

5. Claims 8-13, 15, 16, 20, 21, 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (JP 56-084445) and Kudo et al (JP 57-210941).

Kato teaches (see abstract) a Ni-Fe-Cr alloy that contains 35-65 wt% Ni, 20-35 wt% Cr and the balance Fe. The alloy also contains 0.05-0.25 wt% C, 0.1-0.6 wt% N, 0.01-0.5 wt% Al, less than 1.0 wt% Si, and one or more of 0.05-2.00 wt% Mo, 0.05-2.00 wt% W, 0.05-3.00 wt% V and 0.05-3.00 wt% Nb (all group 4-6 elements). The content of C is within the presently claimed range. The contents of N, Al, Si, Ni and group 4-6 elements overlap the presently claimed ranges. See MPEP 2131.03. The range of Cr is broader than the presently claimed ranges. However, changes in temperature,

concentrations, or other process conditions of an old process do not impart patentability unless the recited ranges are critical, i.e., they produce a new and unexpected result. In re Aller et al (CCPA 1955) 220 F2d 454, 105 USPQ 233. Only result-effective variables can be optimized. In re Antonie 559 F2d 618, 195 USPQ 6 (CCPA 1977). See MPEP 2144.05 II. In the present case, it would have been within the expected skill of a routineer in the art to have optimized the content of Cr within the broad range taught by Kato in order to maximize the mechanical and chemical properties of the alloy (such as corrosion resistance).

Kato is silent on the content of P and S in the alloy. Thus, it would inherently contain an impurity amount. The impurity level in such alloys is defined by Kudo et al (see abstract) as being less than 0.03 wt% P and less than 0.005 wt% S.

Regarding claim 9, the range of C taught by Kato overlaps the range of C in this claim. See MPEP 2131.03.

Regarding claims 10-12, though Kato is silent about N/C, Kato teaches in the examples (see table on page 3) that N/C ranges from 0.7818 (example A) to 4.625 (example H). Thus, Kato teaches an overlapping range of N/C.

Regarding claims 13 and 34, Kato teaches (see abstract) that Mo+ W/2 can be as high as 3.0 wt% (2.0 wt% Mo, 2.0 wt% W), which touches the presently claimed range. See MPEP 2131.03.

Regarding claim 15, it would have been within the expected skill of a routineer in the art to have optimized the content of Cr within the broad range taught by Kato in

order to maximize the mechanical and chemical properties of the alloy (such as corrosion resistance).

Regarding claim 16, Kato teaches (see abstract) an overlapping range of Si of less than 1.0 wt%.

Regarding claim 20, Kato teaches (see abstract) that the balance of the alloy is Fe. When the composition was selected with a majority of Ni, it would have been expected to contain less than 14.8 wt% Fe.

Regarding claim 21, Kato teaches (see abstract) that the alloy contains 0.005-0.01 wt% B.

Regarding claim 33, as above, Kato et al teach the claimed composition. Though Kato is silent on group 3 elements and Mn being present, the present claim does not require group 3 elements and Mn to be present and the claimed ranges include an addition of zero.

### ***Response to Arguments***

6. Applicant's arguments with respect to claims 8-38 have been considered but are moot in view of the new ground(s) of rejection.

7. Applicant's arguments that the previous rejection was incomplete have been addressed in this action, thus necessitating the new grounds of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry D Wilkins, III whose telephone number is 703-305-9927. The examiner can normally be reached on M-Th 6:00am-4:30pm.



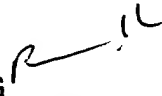
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V King can be reached on 703-308-1146. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Harry D Wilkins, III  
Examiner  
Art Unit 1742

hdw  
March 24, 2003

ROY KING   
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700